

Recovery Plan Action Status

Plan Name: Mitchell's Satyr Butterfly

Plan Status: Final

Plan Date: 02-Apr-98

Lead Agency: USFWS

Lead Office: East Lansing Ecological Services Field Office
(517-351-2555)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	1	1.1	Survey for new populations; Michigan	Ongoing Current	Prior to FY 1995		Michigan Department of Natural Resources, The Nature Conservancy	Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Species Expert, Volunteer	FY4 - FY10 costs are \$21,000. Tasks 1.1, 1.2 and 2.1 are highly interrelated and must be performed concurrently by coordinated teams.
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	1	1.1	Survey for new populations; New Jersey	Not Started			New Jersey Department of Environmental Protection	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$7,000. Tasks 1.1, 1.2 and 2.1 are highly interrelated and must be performed concurrently by coordinated teams.
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	1	1.1	Survey for new populations; Ohio	Not Started			Ohio Department of Natural Resources, Ohio Lepidopterist Society	Work type not yet selected	Labor type not yet selected	Tasks 1.1, 1.2 and 2.1 are highly interrelated and must be performed concurrently by coordinated teams.
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	1	1.1	Survey for new populations; Indiana	Ongoing Current	Prior to FY 1995		The Nature Conservancy, Indiana Department of Natural Resources	Research: Population Surveys	Contract, Graduate Student, Species Expert, Volunteer	FY4 - FY10 costs are \$14,000. Tasks 1.1, 1.2 and 2.1 are highly interrelated and must be performed concurrently by coordinated teams.
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	1	1.2	Monitor extant populations; Indiana	Ongoing Current	Prior to FY 1995		The Nature Conservancy, Indiana Department of Natural Resources	Research: Population Surveys	Labor type not yet selected	FY4 - FY10 costs are \$14,000. Tasks 1.1, 1.2 and 2.1 are highly interrelated and must be performed concurrently by coordinated teams.
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	1	1.2	Monitor extant populations; Michigan	Ongoing Current	Prior to FY 1995		Michigan Department of Natural Resources, Indiana Department of Natural Resources, Michigan Natural Features Inventory	Research: Population Surveys	Contract	FY4 - FY10 costs are \$14,000. Tasks 1.1, 1.2 and 2.1 are highly interrelated and must be performed concurrently by coordinated teams.

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Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	1	2.1	Conduct studies of larval ecology; Indiana	Partially Complete	Prior to FY 1995		The Nature Conservancy, Indiana Department of Natural Resources	Research: Habitat Requirements, Research: Other Information, Research: Propagation	Labor type not yet selected	Tasks 1.1, 1.2 and 2.1 are highly interrelated and must be performed concurrently by coordinated teams.
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	1	2.1	Conduct studies of larval ecology; Michigan	Ongoing Current	Prior to FY 1995		Michigan Department of Natural Resources, The Nature Conservancy	Research	Labor type not yet selected	Tasks 1.1, 1.2 and 2.1 are highly interrelated and must be performed concurrently by coordinated teams.
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	2.2	Quantify habitat requirements/use; Indiana	Ongoing Current	Prior to FY 1995		The Nature Conservancy, Indiana Department of Natural Resources	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$3,000
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	2.2	Quantify habitat requirements/use; Michigan	Ongoing Current	Prior to FY 1995		Michigan Department of Natural Resources, The Nature Conservancy	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$5,000
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	2.2.6	Conduct genetic studies on <i>N. mitchellii</i> throughout range, excluding <i>N. m. francisi</i> .	Ongoing Current			Michigan State University	Research: Genetics	Graduate Student	FY2010: Received GLRI funding (\$135,668) to continue genetics work & study effects of Wolbachia. This project also included work on Hine's emerald dragonfly.
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	1	2.2.7	Study how groundwater effects prairie fens.	Ongoing Current	FY 2010		Michigan State University	Research	Contract	Received Preventing Extinction funding in 2009 to study to model & map groundwater contributing areas to 2 prairie fens (pilot project). GLRI funding awarded in 2010 to continue project and model 14 fens containing occupied satyr habitat.
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	2.3	Study habitat disturbance response - Indiana	Ongoing Current	Prior to FY 1995		The Nature Conservancy, Indiana Department of Natural Resources	Work type not yet selected	Labor type not yet selected	To coincide with task 2.2; FY4 - FY10 costs are \$12,000

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Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	2.3	Study habitat disturbance response - Michigan	Ongoing Current	Prior to FY 1995		Michigan Department of Natural Resources, The Nature Conservancy	Work type not yet selected	Labor type not yet selected	To coincide with task 2.2; FY4 - FY10 costs are \$15,000
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	2.4	Determine population viability - Ohio	Not Started			U.S. Fish and Wildlife Service, The Nature Conservancy, Ohio Department of Natural Resources	Work type not yet selected	Labor type not yet selected	Costs are To Be Determined (TBD)
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	2.4	Determine population viability - Indiana	Not Started			U.S. Fish and Wildlife Service, The Nature Conservancy, Indiana Department of Natural Resources	Work type not yet selected	Labor type not yet selected	Costs are To Be Determined (TBD)
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	2.4	Determine population viability - Michigan	Not Started			U.S. Fish and Wildlife Service, Michigan Department of Natural Resources, The Nature Conservancy	Work type not yet selected	Labor type not yet selected	Costs are To Be Determined (TBD)
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	2.4	Determine population viability - New Jersey	Not Started			U.S. Fish and Wildlife Service, The Nature Conservancy, New Jersey Department of Environmental Protection	Work type not yet selected	Labor type not yet selected	Costs are To Be Determined (TBD)
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	3	2.5	Conduct captive rearing studies	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Michigan Department of Natural Resources	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$15,000
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	1	3.1	Protect populations vulnerable to poaching	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Michigan Department of Natural Resources	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$35,000
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	1	3.1	Protect populations vulnerable to poaching	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Indiana Department of Natural Resources	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$14,000
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	3	3.1	Encourage land acquisition	Ongoing Current	Prior to FY 1995		The Nature Conservancy, Indiana Natural Heritage Program	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$35,000

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Mitchell's satyr Butterfly (Neonympha mitchellii mitchellii)	2	3.2	Protect essential habitats - Michigan: St. Joseph County site	Not Started			U.S. Fish and Wildlife Service, Michigan Department of Natural Resources, The Nature Conservancy	Work type not yet selected	Labor type not yet selected	Costs are To Be Determined (TBD); Costs for land acquisition can not be predicted and are therefore not included in the long range budget
Mitchell's satyr Butterfly (Neonympha mitchellii mitchellii)	2	3.2	Protect essential habitats - Indiana: LaGrange Co. West	Discontinued			U.S. Fish and Wildlife Service, The Nature Conservancy, Indiana Department of Natural Resources	Management: Habitat Maintenance and Manipulation	Labor type not yet selected	Costs are To Be Determined (TBD); Costs for land acquisition can not be predicted and are therefore not included in the long range budget
Mitchell's satyr Butterfly (Neonympha mitchellii mitchellii)	2	3.2	Protect essential habitats - Michigan: Cass Co. East & Southwest	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Michigan Department of Natural Resources, The Nature Conservancy	Work type not yet selected	Labor type not yet selected	Costs are To Be Determined (TBD); Costs for land acquisition can not be predicted and are therefore not included in the long range budget
Mitchell's satyr Butterfly (Neonympha mitchellii mitchellii)	2	3.2	Protect essential habitats - Indiana: LaPorte Co. site	Ongoing Current			U.S. Fish and Wildlife Service, The Nature Conservancy, Indiana Department of Natural Resources	Management: Habitat Maintenance and Manipulation	Labor type not yet selected	Costs are To Be Determined (TBD); Costs for land acquisition can not be predicted and are therefore not included in the long range budget
Mitchell's satyr Butterfly (Neonympha mitchellii mitchellii)	2	3.2	Protect essential habitats - Michigan: St. Joseph County site	Not Started			U.S. Fish and Wildlife Service, Michigan Department of Natural Resources, The Nature Conservancy	Work type not yet selected	Labor type not yet selected	Costs are To Be Determined (TBD); Costs for land acquisition can not be predicted and are therefore not included in the long range budget
Mitchell's satyr Butterfly (Neonympha mitchellii mitchellii)	2	3.2	Protect essential habitats - Michigan: Jackson Co. East	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Michigan Department of Natural Resources, The Nature Conservancy	Work type not yet selected	Labor type not yet selected	Costs are To Be Determined (TBD); Costs for land acquisition can not be predicted and are therefore not included in the long range budget
Mitchell's satyr Butterfly (Neonympha mitchellii mitchellii)	2	3.2	Protect essential habitats - Michigan: Berrien Co. South	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Michigan Department of Natural Resources, The Nature Conservancy	Work type not yet selected	Labor type not yet selected	Costs are To Be Determined (TBD); Costs for land acquisition can not be predicted and are therefore not included in the long range budget

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Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	1	3.3.1 to 3.3.4	Provide current site occurrence info at least yearly to agencies	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Michigan Natural Features Inventory, Indiana Natural Heritage Program, New Jersey Natural Heritage Program, Ohio Natural Heritage Program	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$14,000
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	3.4	Develop management plans - Ohio	Not Started			U.S. Fish and Wildlife Service, The Nature Conservancy, Ohio Department of Natural Resources	Work type not yet selected	Labor type not yet selected	
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	3.4	Develop management plans - Indiana	Not Started			U.S. Fish and Wildlife Service, The Nature Conservancy, Indiana Department of Natural Resources	Work type not yet selected	Labor type not yet selected	
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	3.4	Develop management plans - Michigan	Complete	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Michigan Department of Natural Resources, The Nature Conservancy	Work type not yet selected	Labor type not yet selected	
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	3.4	Develop management plans - New Jersey	Not Started			U.S. Fish and Wildlife Service, The Nature Conservancy, New Jersey Department of Environmental Protection	Work type not yet selected	Labor type not yet selected	
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	3.5	Implement habitat management plans - Michigan	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Michigan Department of Natural Resources, The Nature Conservancy	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$42,000
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	3.5	Implement habitat management plans - Indiana	Not Started			U.S. Fish and Wildlife Service, The Nature Conservancy, Indiana Department of Natural Resources	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$21,000

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Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	3.5	Implement habitat management plans - Ohio	Not Started			U.S. Fish and Wildlife Service, The Nature Conservancy, Ohio Department of Natural Resources	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$21,000
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	3.5	Implement habitat management plans - New Jersey	Not Started			U.S. Fish and Wildlife Service, The Nature Conservancy, New Jersey Department of Environmental Protection	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$21,000
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	3.6	Develop agreements of protection on public lands - Indiana	Not Started			U.S. Fish and Wildlife Service, The Nature Conservancy, Indiana Department of Natural Resources	Work type not yet selected	Labor type not yet selected	
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	3.6	Develop agreements of protection on public lands - Michigan	Not Started			U.S. Fish and Wildlife Service, Michigan Department of Natural Resources, The Nature Conservancy	Work type not yet selected	Labor type not yet selected	
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	3.7.1 to 3.7.4	Promote protection of occurrences on private land	Ongoing Current	Prior to FY 1995		Michigan Department of Natural Resources, The Nature Conservancy	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$42,000
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	3	3.8	Promote local zoning	Not Started			Michigan Department of Natural Resources, Indiana Department of Natural Resources	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$4,000
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	3	3.9	Support Natural Area designation	Not Started			Michigan Department of Natural Resources, Michigan Natural Features Inventory	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$70,000
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	2	4	Develop outreach program	Ongoing Current	Prior to FY 1995		Michigan Natural Features Inventory, Indiana Natural Heritage Program	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$70,000
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	3	5.1	Establish breeding facility	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ohio Department of Natural Resources, Ohio State University, Columbus	Work type not yet selected	Labor type not yet selected	FY4 - FY10 costs are \$42,000; ODNR/OSU have expressed interest in breeding facility and have potential funding

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Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	3	5.2	Reestablish historical populations - Indiana	Not Started			U.S. Fish and Wildlife Service, Indiana Department of Natural Resources	Work type not yet selected	Labor type not yet selected	FY 4 - FY 10 costs are \$49,000; Except for Michigan, costs should decrease incrementally with time - Michigan costs will hold steady because of the number of sites where reintroduction in desirable
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	3	5.2	Reestablish historical populations - Michigan	Not Started			U.S. Fish and Wildlife Service, Michigan Department of Natural Resources	Work type not yet selected	Labor type not yet selected	FY 4 - FY 10 costs are \$70,000; Except for Michigan, costs should decrease incrementally with time - Michigan costs will hold steady because of the number of sites where reintroduction in desirable
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	3	5.2	Reestablish historical populations - Ohio	Not Started			U.S. Fish and Wildlife Service, Ohio Department of Natural Resources	Work type not yet selected	Labor type not yet selected	FY 4 - FY 10 costs are \$35,000; Except for Michigan, costs should decrease incrementally with time - Michigan costs will hold steady because of the number of sites where reintroduction in desirable
Mitchell's satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	3	5.2	Reestablish historical populations - New Jersey	Not Started			U.S. Fish and Wildlife Service, New Jersey Department of Environmental Protection	Work type not yet selected	Labor type not yet selected	FY 4 - FY 10 costs are \$49,000; Except for Michigan, costs should decrease incrementally with time - Michigan costs will hold steady because of the number of sites where reintroduction in desirable